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No. 65

(Materials on the Air Forces)

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FOREWORD

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SELECTED SOVIET MILITARY TRANSLATIONS
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[This report contains the translations of seven articles concerning the Soviet Air Forces published in various issues of Krasnaya Zvezda (Red Star). Complete bibliographic information accompanies each article.]

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WHEN EXACTINGNESS IS LOW

[Following is the translation of an article by Col F. Lushnikov in Krasnaya Zvezda (Red Star), 31 January 1961, page 3.]

"Happy landings!". Commanders and instructors usually express this wish when the candidate, having gone through the difficult school of basic training, feeling the strength of his young wings, climbs into the cockpit of a plane to make his first solo flight. This expresses not only a wish for success in the future flying career of the candidate but confidence on the part of the senior comrades that their pupil will bear the lofty title of Soviet officer with dignity and will persistently strive to attain the heights of military skill and will not cause shame to come to the glorious traditions of the Air Force. Happy landings! This expression involuntarily came to us when we were sitting in the hall where the regular Party conference of the Orenburg Higher Air Force School was being held. It has trained many brave airmen for the Soviet Army. It has rich traditions and a glorious history. This school trains specialists of particularly high qualifications, persons who are capable of applying in combat new air force technology which is much more complex than in the past.

The school as a whole and the Party organizations in particular have had their difficulties. Not all of them have been overcome nor is everything just as one would have it. But the Party teaches to look to the future and to see the long-range perspective. It was this confidence in tomorrow with which the speeches of the delegates were infused -- commanders, instructors, engineers, school Party and political workers. They're our achievements. This cannot be denied. However one of the speakers -- political department chief Col N. A. Abazin -- and those Communists participating in the discussions crowded over successes achieved least of all. They concentrated their attention on bringing out deficiencies which are hindering the school in the fulfillment of new and more complex tasks and on outlining sure paths for

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their removal. We admit that there are many of these shortcomings. Certain teachers have not achieved great success with their officer candidates. Cases are common whereby officer candidates receive poor marks in mathematics, theory of flight and certain other disciplines. Not everything has been done to see that the future officer-flyers adhere strictly to the requirements of military regulations. Among officer candidates there are cases of violation of discipline and of mutual guarantees. For example, recently a group of officer candidates went AWOL to a club for dancing. They endeavored to ascertain who was the initiator of this. They did not succeed in finding him. Due to a feeling of false loyalty, nobody would name the instigator. What did they do in the komsomol organization? They rebuked the offenders, gave a few edifying speeches and left it at that.

The fact that certain officers, including Communists, understand their obligations in too narrow a sense attracts attention. Instructors sometimes say: It is our business to equip the officer candidates with solid theoretical knowledge. Certain commanders of air force podrazdeleniya where the future flyers undergo flight training assert that it is their duty to teach the officer candidates to handle an airplane. But none of these consider themselves obligated to engage in training the officer candidates as a father would. Unfortunately, this facet of the matter has escaped the notice of the school's Party organization. Methodological work is poor in many of the school's podrazdeleniya. The teachers and instructors have varying views on the forms and methods of training the young flying cadres. Methodological councils are mostly idle. The school does not maintain contact with other schools in order to exchange experience and learn in turn everything of value. This was mentioned at the conference by Lt Col Merkulov, Col Tatsenko, Lt Col Pashkovskiy, etc.

A flight school is a complex military organism. The knowledge and skills essential for flight operations are received by the officer candidates not only in the classrooms and laboratories but on the training field, in the flight podrazdeleniya. Where if not here must the officer candidate inculcate within himself the spirit of high exactingness and military discipline, without which the operations of an air force chast' are unthinkable. Podrazdeleniya in which the entire mode of operations actually teaches much to the future officers do exist in the school. The names of Maj Zholudev, Lt Col Zavarz and others were named at the conference. For example, the squadron commanded by Maj Zholudev is an excellent one and serves as an example to the others.

But in certain training squadrons things have not been put into proper order. In one of the podrazdeleniya

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the school year began in a disorganized manner. On the eve of the flights officer-leaders Papko and Eskin did not even know whether the flight equipment was in ready condition or whether the pilot-instructors were prepared to carry out the exercises. The senior officer was compelled to postpone the flights. How did political worker Lt Col Petushin and secretary of the Party organization Maj Ponomarenko react to this? They adjudged the postponement of the flights as unjustified fault finding and as "intrigues" by the commission which revealed the defects. Officer Eskin took part during the debates at the conference. It would seem that he would evaluate the fact of lack of organization in a self-critical manner. Nothing of the sort took place. He endeavored to shove the blame on others. The attempt to avoid responsibility and whitewash shortcomings was observed in other podrazdeleniya. A group of young service men arrived last year in the squadron commanded by Maj Pruss. The old regulars attempted to intimidate them and dominate them. This is, of course, a serious matter. However, it was not made public. Why was this? How is it possible to explain the fact that the commander, Party and komsomol leaders learned of this only two months subsequent to the events? It can be explained only by the fact that due to the screen of general measures they did not see actual living persons with their thoughts, hopes, endeavors, did not speak with them and did not attempt to acquaint themselves with their needs and requirements.

We must say that this case did not receive proper attention in the report nor in the speeches of the delegates. It was mentioned in passing, as a harmless prank by the "old men". A speech by the commander of the Privolzhskiy Military Okrug, Lt Gen Stuchenko, was required in order to demonstrate the political short-sightedness on the part of certain Communist leaders in this case. "The most important thing is education," he said. "This is man, although sometimes we do not know man. All the defects emanate from this."

There are many komsomol members in the school. This is a force which could act as a great influence on all facets of the combat and military training of the future officers. with correct, and most important, daily Party leadership. Unfortunately, the activities of several komsomol organizations are not distinguished by militance. Many komsomol members are lagging in their studies and violating military discipline. This happens because certain Party committees of training chasty and the podrazdeleniya party bureaus do not penetrate deeply into the activities of the komsomol organizations, limiting themselves to general instructions. The sharp, critical speeches given by the delegates to the

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conference boiled down to the following: What has been done by Party organizations in order to eliminate once and for all such shortcomings? For example, could the secretary of the Party committee of the training chast of Maj Ponomarenko not mobilize the forces of the Communists in order to achieve a high level of organization in training for the new year? The majority of podrazdeleniya commanders, engineers and technicians are Communists. Why are they at the tail end? Why have they not manifested care, will and steadfastness, traits which should be inherent to every Party member? We come to an involuntary conclusion: in many Party organizations exactingness towards Communists is low. They are not seriously questioned as to how they are carrying out their Party duty. Here is an example. The head of a KECh podrazdeleniye, Communist Alekhin, was not carrying out his duties conscientiously. Once he did not even show up at work. The Party bureau, headed by Capt Stepanov, made the following decision: "In view of the fact that it is not known what Alekhin was doing during the 24 hour period, we shall limit ourselves to calling him into the office".

Taking advantage of the indulgence of the Party organization, Alekhin continued to carouse and literally deserted his post. The low level of exactingness by the Party bureaus and Party leaders towards Communists is explained also by the fact that some of them do not participate in educational work with officer candidates, do not present an example in training and stand apart from public affairs. Many critical remarks were made by the delegates to the conference against the political department of the school. They said that the workers in this department rarely made reports and gave lectures, were not seriously instructing the commanders and party leaders in the practice of political work among the service men. This explains to a great degree the fact that measures carried out in the chast are of a non-specific nature, divorced from reality and the tasks of military training. The Party conference was held on the whole in an organized and business-like manner. It made it possible to reveal many shortcomings and work out a specific resolution. The present task is to fulfill it successfully.

PILOT PREPARING FOR COMBAT

[Following is the translation of an article by Gds Maj Gen Avn B. Yerevin in Krasnaya Zvezda, 2 February 1961, page 2.]

A letter came to the flight school. This letter told of the service record of young fliers in a combat chast. "Your former pupils are good fliers," the commander writes. "It is fine to see that the young men have mastered not only the techniques of piloting aircraft but have assimilated in addition certain combat skills." Many such appraisals are sent to flight schools. Naturally pleasant news is nice to receive. The successes of the young fliers in flight training are at the same time a unique certification of the great work put in by the entire collective of the school -- commanders, flight instructors and teachers, Party and kom-somol organizations. But sometimes letters of another type arrive. They report that young officers, graduates of schools, are quite skillful in flying, but some of them do not have sufficiently well-developed combat qualities. Therefore, for example, during air combat and group flights these persons act in an indecisive manner and sometimes commit blunders.

What is the matter? It would seem that the abilities of the officer candidates are identical, and the end results in training were the same. If one begins to analyze this contradiction, he comes to the conclusion that one of the reasons is a narrow comprehension on the part of certain commanders and instructors of flight schools of their role and tasks in training future fliers. "The officer candidate must receive as much theoretical knowledge as possible," they reason. "He must be trained to take off and land flawlessly. As for combat skills, let the combat units worry about that..." This opinion is basically wrong. Here is the reason why. An excellent piloting technique is doubtlessly an important condition for the successful mastery of combat skills. However, it is impermissible to concentrate all one's attention merely on the ability to fly an air-

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plane. Only that flier who is utterly devoted to his Socialist Motherland, who has a deep comprehension of his military duty, who intelligently uses the combat potential of the equipment and weapons entrusted to him, possesses such valuable qualities as daring and courage, initiative, ingenuity and decisiveness, is capable of vanquishing the foe. All of these and other fine moral-combat qualities must be formed and inculcated during the period of military service, and this means from the first day of candidate training at the flight school. One recalls the past war. At that time young fliers arrived at the front after a short period of training in flight schools. They were forced to supplement their training in a combat class. Things are different now. Our schools possess experienced command cadres and have the time and other opportunities for the successful training of officer candidates. Now they furnish the future flyers not only with flight but also with engineering knowledge. One asks why it is necessary to relinquish the necessity of equipping officer candidates with combat skills? For example, let us take such an important combat quality as discretion, the ability to carry out an active strike against a target. This is extremely important for a fighter pilot. To be circumspect on the ground and in the air means to discover the enemy in time, to forestall his sudden attack, and to secure an advantageous position for the strike with an energetic maneuver. "The one who sees the enemy first has the battle half won", experienced fliers say. And this rule, confirmed in combat many times, has not lost its significance at the present time, when radar has come to the aid of the flier. As early as the first flights it is essential to teach the officer candidates to distribute their attention correctly and to inculcate in them the skills of actively carrying out a strike.

This is what flight instructor Volkov does. The following is a common example from the experience of this up-to-date officer. He once noticed that officer candidate Zorin, his attention occupied by zone flying, was paying little attention to the air space around him. The instructor pointed this shortcoming out to his subordinate and required that he during regular flights report on aircraft located within his visual range. Regular training brought positive results. Do all instructors teach their officer candidates in the art of active strikes against aerial targets? Unfortunately, no. "Our obligation," certain officers say, "is to teach the officer candidate circumspection, in order to assure safety and a successful outcome of the flight." The idea is of itself correct, and one cannot bring forth a rebuttal. However, unfortunately this methodological approach sooner or later becomes evident. Training exercises in the

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air are gradually becoming more complex. In the combat chast the young flier begins to work on the elements of combat application. Skills of an active strike are particularly essential here, as well as the ability to pick out targets at great distances. Such combat qualities are not acquired immediately. It is natural that a flier orients himself poorly and commits errors. The commanders are at a loss: and officer's flying qualities are fine, but when a more difficult task is being carried out -- things go wrong. They begin to elucidate the reason for this, and it often turns out that the young flier does not have the ability to distribute his attention during flight, and the skills of actively searching for a target are poorly developed. Who is to blame? First of all it is the instructor, the first tutor of the airman. It is apparent that he has forgotten that circumspection is necessary to a flier not only for the successful fulfillment of training tasks in the flight school but also for the improvement of combat skills in the combat chast, where greater demands are placed on the flier.

It is no easy matter to sustain victory in a modern air battle. Besides the fine technique of piloting, excellent tactical training, a high degree of combat activeness and initiative are required. In order to develop and train these combat qualities in an officer candidate, the commanders and instructors must create the proper setting during the flights and train the men to surmount difficulties. This is quite evident to our leading officers: Kuznetsov, Zimin, Makeyev, Utkin and many others. However, why should we hide the fact that we still have instructors who hover over their subordinates too much, hamper their initiative and independence. What is this leading to? The officer candidate becomes accustomed to operating according to "crib notes", manifests indecision, sizes up the situation with a lack of assurance and timidly makes an independent decision. Naturally we cannot compare the training level of an officer candidate with an experienced flier. However, this does not mean that a young flier must be trained in simplified circumstances. A high degree of tactical skill and combat activeness as all human capabilities are trained by means of constant labor in order to overcome difficulties.

An important role in the training of young fliers and the formation of combat qualities in them is played by the instructors in the flight schools. Indicative in this respect is the experience of officers Derzhavin and Pol'shchikov. They are regularly at the fields and directly study the training of the officer candidates for flying with combat application. The fact that certain men, upon attacking a target, go through maneuvers with a lack of assurance and commit errors in aiming did not escape the attention of the

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officers. The instructors analyzed the actions of the students and began to hold special exercises in their classes. In addition, they prepared training aids, with the help of which the officer candidates trained to recognize various types of aircraft, to determine a target under foreshortened conditions and the distance from it. The instructors also make broad use of valuable visual aids. All of this is valuable in spurring on the officer candidates to assimilate successfully the elements of combat application.

There are still instructors who limit their activities to "pure" theory and lectures. These persons should be invited more often to come to the training field, to participate in post-flight criticism and preparatory officer candidate training. This would aid in strengthening the ties between theory and practice, as well as a more purposeful formation in a flier not only of flight but also of combat qualities. We should like to mention the tactical training of officer candidates. Enough time is devoted to such classes in flight schools. However, in our opinion tactics should be imparted in lectures, class-group lessons as well as tactical briefings. Unfortunately, these forms of training are sometimes practiced on a scale which is far too small. It also happens that lessons on tactics take place during the period of intensive flight work or are planned for flight breaks. For this reason many officer candidates do not have the opportunity to prepare for the lessons thoroughly.

Officer candidates in flight schools are young and energetic people, with ardent and restless hearts, with lively and receptive minds, full of boiling energy. It is necessary to take this into consideration in the process of training in order to develop in the men a love for flying in an intelligent and purposeful manner, to strengthen their character, to develop airmen who are steadfast and utterly devoted to their country. With this aim in mind commanders, Party and komsomol organizations in our schools are carrying out many different measures. These include meetings with heroes of the Civil War and World War II, evening sessions under the heading "there is always a place for deeds in life", lectures and reports on fighting traditions, heroism and courage, etc. Unfortunately, these functions are not always carefully prepared. If they are held in haste, the chasty and podrazdeleniya lose the connection with actual experience, and this naturally results in failure to achieve the goals aimed for, since the heart and soul of the young servicemen are not moved. The combat chasty can do much to aid in forming combat qualities in officer candidates. Let us take those letters which arrive at the flight school. Often they are written in a formal, dry and stereotype manner. Sometimes they lack a deep analysis of the shortcomings in

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the flight training of the young fliers as well as business-like recommendations. The flight instructors and teachers of flight schools would like to receive detailed reports on their fledglings with concrete proposals. The training of young fliers is a matter of great national importance. Leaving for a combat unit, the graduate of a flight school must possess not only fine flying but certain combat qualities. This should be a matter of concern to the commanders, instructors and teachers, Party and komsomol organizations of the schools. They must steadfastly and tirelessly train the future fliers, carefully develop our intelligent warriors of the air -- the reliable watchmen over our country's skies.

SAFEGUARD HEALTH OF PILOTS

Following is the translation of an article
in Krasnaya Zvezda, 3 February 1961, page 1,7

The Communist Party and the Soviet Government are taking unstinting care of the health of all Soviet citizens, including our servicemen. Much attention in particular is being devoted toward strengthening the health and physical training of flyers. Recently the USSR Ministry of Defense issued an order in which concrete measures were formulated to furnish flight personnel officers carrying out missions in jet aircraft with sanatorium care and organized recreation. Staff commanders and officers, as well as medical workers are obligated to study this document carefully and be guided strictly by it in their practical activities in the organization and medical facilities of flight training.

Flight conditions with modern equipment have increased the demands for health and stamina on the part of the flight personnel. In order to ease the task of the crew in the air, special apparatus and equipment is used and aircraft are equipped with hermetically sealed cabins and controls are made automatic. Nevertheless, the flying profession remains one of the most complex types of human activity, since it demands considerable physical and emotional effort. Practice in combat flight training shows that even small deviations in health conditions lower the ability and stamina of flight personnel. Therefore, commanders and medical workers should take daily care of the health of flyers and strictly check the observance of pre-flight regimen, carry out necessary medical-prophylactic measures in time. With such a feeling of high personal responsibility for their task, our leading air force physicians, officer Shchepikhin, Masonov, Tsaplin, Mamuvayskvili and many others, are carrying out their obligations.

In the podrazdeleniya and chasty where these officers serve, flight medical provisions are set up in a model manner. Much explanatory work is being carried on among flight personnel on problems of aviation hygiene and physiology.

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Medical personnel are participating actively in the organization of work and recreation of the flyers, carefully check their diet and the correct distribution of the flight load. To care constantly for the health of the flyers is the obligation not only of the air force physicians but also the direct duty of all commanders. They are to make a deep study of the individual characteristics of their subordinates and be well acquainted with the influence of the flight load on the maintenance of the capabilities and stamina of each flyer. Only under such conditions can the commander assure the formation of a rational pre-flight regimen of labor, recreation and diet for flight personnel in accordance with the nature of the flights to be made. In many air force garrisons specially equipped facilities have been set up for pre-flight rest and night sanatoria. The flyers are sent to them both in periods of intensive flight operations and before undertaking the most difficult flight exercises. It is extremely important for the dispensaries and night sanatoria to contain all conditions for the sound organization of pre-flight regimen. Unfortunately, certain air force garrisons have their facilities for these purposes situated either too close to or too far from the air field. In the former case, the sound of air craft engines disturbs normal rest for the flyers and in the latter case much time must be spent going to and forth. It is therefore not surprising that flight personnel is not especially anxious to visit these dispensaries and sanatoria.

Air force chast'i and podrazdeleniya are equipped with a sufficient quantity of prepaid trips to sanatoria and rest homes of the USSR Ministry of Defense. However, these trips are not always distributed correctly. They are sometimes issued to persons who have no direct relation to flight operations and have no need for medical care in a sanatorium. Certain executive officers go to the other extreme, compelling those flyers to go to sanatoria, who would prefer to spend their leave on camping or other trips, etc. Often errors in furnishing pre-paid trips arise due to faulty planning and violation of the schedule of leaves for flight personnel. Serious complaints should be made against operations of certain sanatoria, particularly of a general somatic type, as well as rest homes. The medical personnel of these medical institutions still do little to organize the active recreation of fliers. And yet here is a wonderful opportunity to attract fliers to participate in various types of sports and games, to participate in applied military types of sports and to carry out these measures in an interesting and entertaining manner, taking into consideration the specific features of flight operations.

In the winter combat training period the requirements

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for flight medical provisions increase considerably. Flight personnel spends a considerable of time on the job at the airfield and carries out tasks under low external temperature conditions. Therefore, the air force physician is called to undertake prevention of colds with particular care and to watch attentively over the health of the fliers. It is impermissible to allow a situation whereby flight crews are compelled to remain for a long period of time at the starting area awaiting take-off. The medical officer should check to see that airfields are well equipped with facilities for keeping warm, changing uniforms and adjusting special paraphernalia. In certain air force chasty cases arise whereby air force physicians limit their entire activities to physical examinations and do not manifest sufficient persistence in organizing flight medical provisions. For example, Officer Antonov has been accused of this shortcoming several times. However, he has not made the correct inferences. The senior controller was forced to discharge Antonov from his position and transfer him to another job. Naturally such cases are extremely rare, but they should not occur at all.

In strengthening the health of flight personnel and in the clear-cut organization of pre-flight regimen, an important role is played by political organs, Party and Komsomol organizations. They are to inculcate in the servicemen a feeling of personal responsibility for the successful conclusion of a flight and they should be more bold in bringing to public censure the misdemeanors of those who have gone into the air in poor health out of a feeling of false shame and who have allowed excessive use of alcoholic drinks. Daily educational work should inculcate into the fliers the understanding that care for health and the strict observance of pre-flight regimen is certainly not the personal affair of each flier and navigator, but an important condition for the further strengthening of the combat readiness of air force chasty and podrazdeleniya.

FUEL SUPPLY SERVICE 25 YEARS OLD

Following is the translation of an article by
Lt Gen Engr-Tech Serv V. Nikitin in Krasnaya
Zvezda, 14 February 1961, page 3.

Whether a plane flashes by, outrunning the sound of its own engines, whether a ship plows through the ocean far beyond the borders of its homeland, whether an automobile races along the freeway or a tank -- across a snowy field -- the moving force is fuel. If it runs out and the equipment stops, its capacity and strength drop sharply. Is it necessary to indicate the tremendous significance in our day possessed by the continuous and timely supply of fuels and lubricants to our armed forces? The first organs for supplying the Red Army with fuel were formed in February 1936. From the very beginning of their existence they began to play an important part in the operations of the Soviet Armed Forces.

Serious tests for the young fuel supply service were presented by the skirmishes at Lake Khasan in 1938 and Khalhin-Gol River in 1939, as well as in the war with the White Finns in 1939-1940. The experience of these battles increased the ability of the fuel supply service and improved the qualitative structure of its organs, as well as improved the technical provision of processes connected with the maintenance, transport, receipt and delivery of fuels and lubricants. In the pre-war years many fuel depots were built, stockpiles of all types of fuels and lubricants were formed, so essential for combat equipment, and mobile reservoirs for fuel, depot distribution pipelines as well as various pump transfer facilities were developed and produced.

World War II demanded particular flexibility and operational ability of the fuel supply service. Operations of unheard-of size and scope, variety and rapidity, with the use of a great quantity of various types of combat equipment required tens and hundreds of thousands of tons of high-quality fuels and lubricants. In 1944 two times more fuel and lubricants were expended by the armed forces than in 1941 and 1.3 times more than in 1942. Carrying out their military obligation to their country, fuel supply service workers showed great steadfastness, initiative and

courage. For example, proud pages in the history of the service are connected with the heroic defense of Leningrad. By the end of 1941, the German-Fascist troops had approached right up to the city and had cut off the troops defending it from all supply bases. The only method of supplying fuel was across Lake Ladoga. On barges and then across the ice by truck, under conditions of frequent sorties by Fascist aircraft, knowing no fatigue, the soldiers, sergeants and officers of the 446th Truck Battalion worked. The "life-line" -- as the route across Lake Ladoga was called at that time -- worked around the clock. Yet Leningrad continued to feel a shortage of fuel. A bold idea was born in the minds of the workers of the fuel supply service -- to construct an underwater pipeline across Lake Ladoga. In May 1942 construction began. Work was done under extremely difficult conditions. The front extended for several kilometers, and the pipe had to be brought out and laid under enemy fire. Many scarce materials and equipment were lacking at that time. However, all difficulties were overcome and the pipeline was constructed in an amazingly short period of time.

There were many such episodes during World War Two. Thousands of soldiers, sergeants and officers and generals were awarded high governmental decorations for the successful fulfillment of command tasks in the continuous supply of fuels and lubricants to the armed forces. These include generals Kormilitsyn, Tomilin, Igritskiy, Kondrat'yev, Yakovlev, officers Storozhev, Sinitsin, Komarov, Dmitriyev, Yershov, Ledovskiy, Levchenko, Alekseyev, Goverunenko, Trusov, Kukushkin, Titarenko, Brodov and others. Ending the war with victory, the Soviet people, engaged in creative labor, is keeping careful watch on the intrigues of the imperialists. Carrying out the instructions of the Party and government, the personnel of the army and navy are steadfastly mastering operations of military equipment and improving the methods of using it on the battlefield. Thus, a serious and primary task of the fuel supply service in peacetime is the complete and timely provision of fuels and lubricants of all sorts to troops undergoing combat training. In order to fulfill this task successfully, the personnel of the service work daily and doggedly to increase their special and military knowledge, to study comprehensively the characteristics of various fuels and oils, methods of storing them and are checking their quality carefully, developing methods of delivery, improvement of means of transport, etc. Much energy, initiative and steadfastness in carrying out measures for troop combat training has been shown recently by the workers of the fuel supply service headed by officers Malyshev, Leonov, Khovrychev, Chernyshev and others. Parallel with training

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the personnel of the service, continuous provision of fuel depends to a great degree on the level of development of technical equipment. Taking this into consideration, new technical means have been created in the post-war period, which are considerably more productive than equipment used during World War Two. A great contribution into improving fuel supply service was given by Engineer-specialists officers Abramov, Avilov, Anisimov, Galiakberov, Kulikov, Frolov, Khramov, Papo, Turchaninov, Sitnikov, fuel depot heads officers Kut'ko, Sushchenko, Kagramanov, depot manager reenlisted Master Sergeant Kulakov and Michman Karpenko, workers Zhavoronkov and Kuzemskiy. They achieved great economy in fuel expenditures and cut down storage losses to a great degree.

Continual improvement of military equipment places new demands on the fuel supply service. The quality of fuels and lubricants is insured primarily by the correct organization of storage. This is why improvement of military fuel depots is a primary task. Supplies of fuels and lubricants stored in fuel depots should be checked periodically by qualitative indices. With this aim in mind it is necessary to improve laboratory quality control and to introduce on a broader scale field labs in the armed forces. New types of transport have acquired greater and greater significance in the delivery of fuel. The increase in fuel consumption requires a rapid and complete mechanization of laborious processes also at the warehouses, particularly in receiving and issuing fuels and lubricants. Much has already been done, but there remains much to be done in the future. Opportunities are limitless in this field for inventors and persons with efficiency ideas. The fuel supply service has made a tremendous qualitative leap during the past 25 years. The future contains new heights of technical and organizational improvements. The attainment of these heights will be a significant contribution on the part of the personnel, Party and Komsomol organizations of the fuel supply service in strengthening the defensive capacity of our country.

COMMAND GIVEN OVER THE AIR

Following is the translation of an article by
Lt Col A. Solomakhin in Krasnaya Zvezda, 8 March
1961, page 2.

Once I participated in night training flights in X Chast'. They were controlled by the assistant commander, a man not yet sufficiently versed in all the finer points of flight operations. While no more than two or three crews were in the air, things at the start command point were comparatively calm. But then things began to get tense: some planes were within the zones, others were heading along the route and still others were approaching the field or in the process of landing. Now it seemed as if the flight controller had been replaced by another man. He grew agitated and nervous, and questions and commands were thrown into the air with and without cause. It was apparent that the situation was having an effect on the fliers. Their voices rang out almost continuously at the start command point.

In a few days I was present once again during training flights, again night flights, in the same chast'. The commander himself controlled them this time -- a colonel, an experienced air fighter and a Hero of the Soviet Union. Approximately the same number of crews were in the air as the first night, but the situation at the start command point was completely different. Here there was calm, a business-like air and complete confidence. The flight controller did not broadcast superfluous orders and questions. In listening to his laconic and terse commands, one felt that the controller "could see" each flier and knew what element of the flight exercise he was carrying out. The confident and calm tone of the flight controller had a great positive effect on the actions of the fliers.

Are these contrasts? Yes, they are, and they are only too evident. They are explained by the degree of training of the flight controllers and their experience. When a flight controller is sure of himself and knows his fliers well, he does not need to ask them questions every minute and give them all types of advice and instructions unnecessarily. The contrary is also true. A poorly-trained controller,

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feeling that something will turn out wrong, fills the air with unnecessary conversation which has an injurious effect. Discipline in radio contact during flight is a far from idle question. It is closely connected with supporting order and organization on the ground and in the air, with securing the safety of the flights themselves. One is reminded of the following case. Lt Legostev, after completing an exercise at a great altitude, began his descent, putting his controls in the "all the way back" position. The plane started high-altitude idling. But the young officer did not recognize this feature of the motor's operation and decided that he had stalled. Pushing the button on the radio transmitter, Legostev reported his conclusion to the flight controller. The latter, however, did not hear him. This happened because the rules of radio contact were not observed by certain crews and the air waves were filled with the conversations of other fliers. What happened? Not having received instructions from the controller, Legostev panicked and made a hasty decision -- to go right in for a landing. However, due to incorrect calculation he was forced to circle once more. It is a good thing that the airplane's engine was actually in good operation condition, and the flight was concluded without incident. But if this had been a case of some real defect, the young flier, not receiving instructions from the ground, could have found himself in an exceedingly difficult situation. Why is it that the air waves are sometimes so cluttered? There can be only one answer: the rules of radio contact are being violated both by the fliers and the flight controllers. It is important to use the radio intelligently also in cases when it is necessary to give additional commands. But unfortunately it often happens that someone invents commands and reports to suit his own taste. Once during a flight Lt Bogatyrev, working out his approach and landing in a closed cockpit, during the course of 25 minutes of the flight posed 22 questions in reference to data of the ground course and bearing indicator. Every minute the pilot loaded the air waves for ten to fifteen seconds, hindering the other crews from making contact with the ground. Violations of the rules of the use of the radio are committed not only by ordinary fliers but, and what is particularly bad, by flight controllers. Some of them endeavor to over-insure themselves, turning to the microphone even in cases where there is no need. For example, one flight controller gave the following supplementary command to all fliers before takeoff. "Check generator switch and oxygen!" When they asked him why he did this, the officer explained: "It is never superfluous to remind the fliers." One can hardly agree with this opinion. Switching on the generator before

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takeoff is checked by the plane technician and the specialist-mechanic turns on the plane's oxygen supply and it is checked by the technician and pilot before the latter climbs into the cockpit. What need is there for this supplementary command.

Some flight controllers send out too many questions over the radio. Their purpose is clear: the better to "see" each flier at any particular stage of the flight. But the way to attain this goal is not a correct one. Superfluous questions and answers can clutter up the air waves to such an extent that it will hinder the flight controller in influencing rapidly the situation in the air when a great necessity arises for this. Why is the following question necessary? "How is the equipment working?" If any assembly or instrument malfunctions during flight, the pilot himself will report this immediately to the start command point without any reminder. In my opinion, in some cases it is entirely possible to shorten commands used in system flight. Let us assume that a flight is being undertaken to a distant guide point covered by clouds. The flier reports on this to the start command point. The flight controller is not required to transmit to the flier: "Permission granted to cut out". It is sufficient to report landing conditions and the commander of the plane will understand that the flight can continue. Let us take another case. After completion of a plotted course the flier reports to the start command point and hears in answer: "Permission granted to land". However, the pilot would understand perfectly well a brief word from flight control: "Ten-four!". It would be another thing altogether if the pilot were not to be allowed to make a landing. In such a case he should be given suitable instructions. Sometimes necessary but not accurately formulated commands are transmitted, and it is difficult for the pilot to understand what is being required of him. In one of the podrazdeleniya the flight controller for the aircraft glide pattern gave the pilots one after the other the following command after the fourth turn: "Decrease the angle!" How is this to be understood? If the angle of attack is decreased it is necessary to push the control stick away, and if the angle of descent is to be decreased, the control stick must be pulled back. Both the meaning and the actions are different. Not understanding what the flight controller had in mind, certain pilots attempted not to react to his commands. The controller was forced to give supplementary explanation.

Liberties taking by the flight controller in radio transmission have a negative effect on flight personnel. Particularly undesirable is the phenomenon of "dressing down", criticism of fliers in the air for mistakes made. Once I was

witness to such a case. Lt Ponomarev arrived in the zone for working on piloting technique and reported to the start command point. For some reason his report came through weaker than the others. The flight controller criticized him for poor adjustment of the throat microphone and threatened to remove him from the exercise. But things did not improve because of this. Furthermore, Ponomarev became nervous and began to mix up commands. Naturally a case of poor adjustment of throat microphones cannot be allowed to slip by, but another time and place should have been chosen for the conversation. Speaking of throat microphone adjustment, this is not a trifling matter as some fliers think. A poorly adjusted throat microphone hinders clear transmission. The controller hears the reports of the pilots poorly and the necessity arises for repeated questions, clarification, and in the final analysis radio transmission is complicated tremendously. These conversations fill up the air waves and distract the flight controller away from guiding the crews and the fliers -- from piloting the plane. Why are there so many shortcomings in the radio contact rules? This is explained by the fact that in many cases they are not given a clear-cut and fundamental evaluation. In the first place, certainly not all violations of radio contact are written in the flight controller's log. In the second place, not all of them are handled during lessons with proper care.

It would be very useful to hear from time to time and then analyze a tape recording of radio conversations. This is a good and useful form of training. Such a lesson was given at one time in the X Chast'. There was a case of violation of the rules of radio contact during a flight. Lt Vaynilovich and Instructor-captain Deyev worked out the approach and landing according to the data of the ground radio course and bearing indicator. The flier asked too many questions concerning the data of the course and bearing indicator, which broadcast on the start channel, and with this jammed all radio transmission, hindering the flight controller from guiding the aircraft on the ground and in the air.

The next day all flight personnel carefully listened to a tape recording of this radio conversation. At the session devoted to discussing the training flight the commander carefully analyzed the mistakes of Vaynilovich and other pilots. There was undoubtedly benefit to be obtained from this lesson. Many chasti practise unique "rehearsals" of radio transmission, beginning from the ignition of the engine before takeoff and ending with cutting the engine before landing. For example, in training young pilots for system flight in a training area, they outline a suitable diagram and each pilot, with a model plane in his hands, responds to the commands received over the radio. The trainer is usually the

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flight controller. These exercises are very useful. Practice testifies to the fact that those places with a constant campaign to maintain strict radio discipline, achieve clarity and brevity in radio transmission, training in the air progresses more fruitfully and in an organized manner, without forming favorable conditions for flight accidents.

SQUADRON GAINS ALTITUDE

Following is the translation of an article by Maj A. Romanov in Krasnaya Zvezda, 5 April 1961, page 2.⁷

We used to fly Mig-17's. At that time pilot training was comparatively simple. Things changed when super-sonic fighter planes came on the scene. During the first solo flights there was hardly any time for the young pilots to think. This showed how demanding and exacting a commander had to be in training his subordinates. In view of this we involuntarily recall the first steps of training novices on supersonic fighters. The young pilots, although they showed no sign, nevertheless experienced a feeling of timidity before the complex machine. And the feeling is not surprising. We taught them to pilot, but we sometimes forget the most important thing -- the moral factor -- education of faith in the new and exceptionally high qualities of the supersonic fighter. I remember some young pilots at first were afraid of the high takeoff speeds and did not always maintain the proper glide. This was not only bad, it was dangerous. At that time we decided to have experienced instructors make demonstration flights. The lieutenants watched the fighter break away from the ground. The engine had power to spare. After this the novices began to act more confidently. The Party organization played a part here. Conversations by experienced pilot-Communists with the young men made it possible for them to be free of their fear of the new high-speed plane. The first experience served as a good lesson for us in the future. Each time we attempted to show the young pilots that no matter how complicated a supersonic plane might be, for our era it is commonplace and it is necessary to have a calm attitude in reference to it. Naturally profound theoretical knowledge is necessary as well as careful preparations for air operations. If a person has all this, he will carry out his flight successfully. This confidence aided Officer Kalinin from the first days of flight to make good progress in training. A few flights with an instructor in the twin-seater MIG-15 -- and he was already soloing. We forewarned him of

all the various phenomena connected with flying and attempted to prepare him morally and psychologically for action in the air. This could not help but tell during his first solo flight. Kalinin successfully carried out subsequent training flights also, rapidly and evenly mastering the training exercises.

Things were different with Sr Lt Koryakin. He spent a considerable length of time between flights. Naturally this left its mark: the trainee lost to a certain degree the skills he had acquired earlier. Another method was used for him. The pilot trained in the plane cockpit, studied special literature and then began flights with an instructor. After an unsuccessful landing, the flight commander asked Koryakin to relate his own mistakes. The pilot analyzed his actions carefully; however, he missed certain errors. For example, in negotiating a semi-loop he put the plane into a climb too rapidly. The instructor corrected the subordinate, explaining what could happen if this took place during a solo flight. All instructors in our squadron now use the same methods in analyzing the actions of a trainee in flight. Here is why. If the pilot is capable of explaining his errors in an intelligent manner from a theoretical viewpoint, he will not repeat this error in a subsequent flight. If merely the instructor harps on the mistakes, some of them will remain with the pilot. A conscious and analytical approach toward mastering each element of piloting technique is what we require from pilots during the entire training process.

The confidence of the commander has a great influence on the consciousness of the subordinate and the formation within him of moral-combat qualities. Confidence lends wings to a man. A warrior works with greater vigor when he constantly feels a great responsibility for the matter at hand. On the other hand, overcaution and lack of confidence in the ability of the subordinate slow down combat training and sometimes this is no guarantee against flight accidents. These examples sometimes take place in practice. In two podrazdeleniya the flight personnel have almost the identical level of training, although flight plans under complicated meteorological conditions are carried out in different ways. What is the reason for this? If one begins to check into it, it turns out that one commander is bold, with faith in the abilities of his subordinates, while the other slows down, is overcautious and is afraid that something might happen, in planning flight exercises. Of course caution is necessary in flying. But caution and overcautiousness are different things. I know this from my own experience. In order not to be eaten up by doubts when

you are at the start point and the pilot is in the air, it is necessary to study the subordinates thoroughly, continuously and daily -- in the air and in the classroom, in the club and on the volleyball court. When the strong and weak sides of the pilot are known, it is easier to resolve the question: can you entrust him with the fulfillment of a new and complex exercise or should it be put off?

There is an officer in our squadron for whom the technique of flying a supersonic fighter at first was more difficult than for his comrades. His former commander was of the opinion that the pilot lacked the capacity for sufficient attention, that while he was in the air he felt too tense, agitated and was therefore prone to dangerous errors. I shall not hide the fact that I had the same opinion of the flier. Once this officer was flying in zone. Suddenly the wind changed sharply. The flight controller arranged to shift the start 180 degrees. They informed the pilot by radio, and yet he attempted to land with the former start point. Why did the pilot forget the command from the ground and why did he not pay attention to the start signals on the field? What was the reason here: distraction or lack of proper training? Naturally people have different personalities and capabilities. What for one person is easy is difficult for another. "Probably," I thought, "they used to look after this pilot too much. He is used to constant advice. He was too absorbed in flying and was not able to make a rapid orientation." After he landed, I had a talk with him. My assumption was correct. In order to eliminate the defect in the flight training of the officer, they planned for him supplementary training on the ground and in the air. I flew with him several times. The pilot was given many opportunities to show initiative. The pilot soon straightened out and began to catch up with his comrades. After his first solo flight in a supersonic fighter I congratulated him. The same thing could be said of other pilots in the squadron, beginning with the right flank and ending with the left. All of this would be on an individual approach in training. I have great faith in this method, which has been proved in practice. I have been teaching people to fly for years and every time, before getting into the instructor's cockpit, I take a good look at the person with whom I am going to fly. In my opinion this is essential. The instructor-commander must know well not only the individual peculiarities of his subordinates but the amount of aid each of them requires. Methodological comprehensiveness in training is based on this, as well as educational work by Party and Komsomol organizations.

As in any air force podrazdeleniye, we have checks on

the flight personnel readiness to carry out missions in the air. But we have taken this check out of the classroom to the fighter area. This was done on purpose. Here the check is not limited to oral answers by the pilots to questions asked. Observing the actions of his subordinates in the cockpit, the commander can evaluate their skills in a more objective manner, more carefully check their ability to handle the equipment. This type of check is more to the point and closer to actual operations, and it aids the pilots more in better preparing for carrying out the exercise from take-off to landing. We pay much attention to the methodological training of flight commanders. The instructor must be a wise pedagog and a fine psychologist. In order to increase methodological skills, we hold frequent exercises for the commanders and have commander training flights.

Cooperatively and with the active aid of the Party organization, the personnel of the squadron is successfully carrying out the tasks placed before it. It is sufficient to say that all of our pilots have raised their class, and in honor of the coming Party Congress, the pilots have assumed new obligations. They will be fulfilled. The guarantee for that is the high level of political consciousness on the part of the fighting men and their tireless endeavors to achieve even better results. Competing with the squadron commanded by Maj Morozov, we shall attempt not only to attain its level but push forward to new heights of combat skills.

DEFECTS SHOULD BE CORRECTED, NOT GLOSSED OVER

Following is the translation of an article by
Lt Col I. Rubtsov in Krasnaya Zvezda, 12 April
1961, page 2.

The weather was excellent. It could not be better for the young pilots: calm and sunny. Nevertheless the young summer day was immediately clouded over by an unpleasant occurrence. Lt Starkov, coming in for a landing, gunned his plane and overran the landing "T". Touching down almost halfway down the landing strip, he applied the brakes and damaged the tires. When they began to ascertain the reason for this, they found out that Lt Starkov had long since been "trained" for this type of landing. His comrades recalled without difficulty that Starkov as a rule overran the mark on landing. At first they were minor, ending up all right, and it was not even considered necessary to point it out to the pilot. This spinelessness almost ended in an accident. We decided to acquaint ourselves with the flight accident condition log and turned over all of its pages, but we did not find the name of Lt Starkov. This gave us the idea to make a careful check into the circumstances to see what was happening in the podrazdeleniye in order to eliminate conditions for flight accidents. Sometimes they attempted to paint a rosy picture about everything here. Many defects in the organization and provision of flight operations as well as errors by pilots in piloting techniques were simply not noted down. Naturally this glossing over was done "intelligently", with references to recommendations by the methodological council of the chast'. There was no need to drag into the massive log various minor errors. Only the more important ones should be included. We heard even the rotten "theory" which went as follows: only mechanical failures lead to accidents. As for errors in piloting, they said that this was due to insufficient training and was a temporary thing and not a reason for accident conditions. It is clear that since errors were not noted down, nobody even thought of analyzing and correcting them. It has long since been proved and confirmed in practice by many air force chast' that it is possible to

fly for many years without any accidents. There are many such chasti in the armed forces. These do not hide behind rotten "theories" but express a high degree of exactingness toward their pilots and honestly, in a true party manner, reveal shortcomings and eliminate them. I should like to speak more in detail on accident-free operations. First of all, this chast' considered as conditions for flight accidents all, without exception, defects in the organization of training flights and in controlling them, as well as any errors in training flight personnel, in piloting techniques and insufficient preparation of equipment. The personnel of this regiment has long since learned to stop dividing errors into serious and insignificant categories. Here every mistake is considered to be dangerous and impermissible.

The calculation of conditions is kept not in a general chronological order but in a detailed manner, according to groups. Conditions connected with organization, provision of flights and flight control are counted separately. Special pages in the log note errors by the flight personnel in flying technique and in aircraft operations, violation of flight discipline and equipment malfunctions. This approach facilitates to a considerable degree study and analysis of conditions for accidents. We should particularly emphasize the fact that the pilots in this chast' truthfully report all errors made by them during zone flight, route flight, above the firing range, etc., far from the eyes of the flight controller. This is a result of great educational work which is being undertaken by the commanders, Party and Komsomol organizations with the flight personnel.

"On one of the training flights," Lt Yemets told us, "I came awfully close to another plane while reaching altitude. Why? I thought, returning to the ground. I came to the conclusion that I began to climb sooner than I should have." In discussing the training flights it was ascertained that other pilots had done the same thing, but they, unfortunately, did not lend any significance to this fact. The commander had a different attitude. With convincing examples he demonstrated that a violation of flight rules could lead to collision in the air. Since then none of the pilots has risked beginning his climb before the calculated point. Study and analysis of this type of facts are done continually in this chast'. After each day of flying the assistant regimental commander discusses with the podrazdelniye commanders each case of negligence, each omission during flight. This discussion always ends with specific recommendations which take on the force of law in practice. In studying accident conditions attention is drawn to their connection with methodological flight work. Suitable corrections are introduced into the training and teaching meth-

ods for flight personnel. In this sense the following example is significant. Two young pilots made the same error on the same day: they were not able to come in for a landing on the first approach. They began to try and ascertain the reason. What was the result? The flight commander, accompanying the pilots, recommended that, in the interests of greater safety, they maintain a vertical speed of descent of 2-3 meters less than the instructions required. This was absolutely unnecessary overcautiousness which could lead to the opposite result. The flight commander pointed out the error on the spot, and during the discussion of the training flights he brought it to the attention of all flight personnel. These errors did not repeat themselves.

Study of accident conditions in the chast' is completed each month with the drawing up of an analysis report. It is the fruit of collective labor. The main purpose of this document is the ascertainment of basic shortcomings in organizing and carrying out flight training. The analysis report is subsequently discussed at the methodological council. During a creative discussion, objectivity of evaluations and correctness of conclusions made and measures outlined are determined. The following stage for averting air accidents consists of special classes devoted to the discussion of specific cases from the experience of the pilots. These classes are directed by the commander of the chast' or his assistant. If there is a necessity, the floor is given to officer-specialists who are experts on problems of aerodynamics, gas dynamics, theory and construction of aircraft, engines, etc. Diagrams, tables and training apparatus are prepared for the classes. A well-thought-out, daily campaign against conditions for flight accidents assures the X air force chast' of accident-free operations during the course of many years.